Montana Department of Environmental Quality

Solid Waste Section

Newsletter

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Record Keeping for Septic Pumpers and Haulers

Things You Must Do

Mary Louise Hendrickson
Solid & Hazardous Waste Specialist

In Montana, approximately 40% of households dispose of their wastewater in septic systems. Periodic pumping of septic tanks is essential to the long-term effectiveness and operation of these systems. What happens to the tank pumpings after they are removed is often a mystery to the owner. The majority of the domestic septage pumped from septic tanks in Montana is land applied (51%), with the remaining disposed of in a wastewater treatment facility (41%) or in lagoons (8%). Regardless of the disposal option chosen by septic pumpers/haulers, records of septage pumping and disposal are required by Montana rules in ARM 17.50.813, and under the U.S.EPA 40 CFR Part 503 rules. All records of septage disposal and land application must be retained for five (5) years.

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Follow the Rules

Pat Crowley
Solid Waste Regulatory Program Manager

Questioning several septic pumpers around the state revealed a serious problem. Pumpers are not following Montana and EPA requirements for proper land application of septage. This can have dire economic consequences for your business as well as pose serious public health threats.

You are required to either lime septage to a pH of greater than 12 for 30 minutes or till the material within 6 hours of land application according to both State and EPA requirements. In addition to this, you must keep records of each load and the vector/pathogen reduction method used (pH or time of tilling). The person who applies the septage must certify these records in the format required by the EPA. If you do not have the proper required language, please either refer to EPA 40 CFR 503.27(b) or contact me at 444-5294 or pcrowley@state.mt.us .

This requirement pertains to all material, even if it is applied to a land owners site. If you are disposing of material on a ranch site, rather than a common site, remember that surface water and other set backs must be observed.

Techniques for lime stabilization are readily available in Pumper magazine and in various EPA documents. The EPA Region 8 website, under "Biosolids," also has some good information. Tillage can be done with a number of farm tools, some of which are towable behind a truck.

Please be aware that the Department and the EPA jointly regulate your business. We designed our

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Figure 1: Example Septage Application Report Form

XYZ Pumping Service

Certification Statement:

I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements [insert either §503.32(c)(1) or §503.32(c)(2)] and the vector attraction reduction requirement in [insert either §503.33(b)(9), §503.33(b)(10), or §503.33(b)(12)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

_____ _____

(Authorized Signature) (Title)

_____ _____

(Printed Name) (Date)

Septage Application Report XYZ Pumping Service								
Driver:								
Date	Time of Application	Location[1]	Number of Acres[2]	Crop[3]	Expected Yield	Gallons Applied[2]	VA-PR Method[4]	Time Incorporated/Method

[1] Septage application is allowed on non-public contact sites: agricultural land, forests, and reclamation sites only after obtaining proper approvals and as long as annual application rate is not exceeded.
[2] The annual application rate of septage to a disposal site must be tracked.
[3] Crop harvesting, grazing, and public access are subject to certain restrictions after septage disposal.
[4] Vector attraction – pathogen reduction: Septage must be treated for pathogens and to reduce vector attraction.
(note: pH of 12 must be maintained for 30-minutes and documented if alkali stabilization is the method chosen for VA-PR)

Record Keeping, continued from page 1

How many pumpers/haulers maintain records as required by the rules? Most licensed haulers/disposers interviewed maintain some type of written log of activities; however, some don't maintain a written record of any kind. ARM 17.50.813 requires licensees to maintain, retain, and make all disposal and land application records available for inspection by State regulatory personnel. Failure to maintain records in accordance with the rules could result in revocation of license and in worst cases, civil action and penalties.

The rules state that the licensee shall maintain records at the place of business specified on the license application or other department approved location. The information is to include, at a minimum:

►Type of material deposited at each disposal location;

►Location of each disposal site, by street address, latitude-longitude, or Section-Township-Range;

►Volume of each material deposited at each site, such as septage, grease trap wastes, sump pumpings and wastes subject to ARM 17.50.816;

►Number of acres to which pumpings are applied;

►Date and time of each application;

►Nitrogen requirement for the crop or other vegetation grown on each site;

►Rate at which the different kinds of pumpings are deposited at each site in gallons per acre per year;

►Vector attraction and pathogen reduction method for each volume of pumpings applied;

►pH of the materials 30 minutes after alkali addition - if that method chosen for PVAR; and,

►Records of landowner objections to application of alkali-stabilized septage.

A sample form to aid land appliers with recording application information is in figure 1, on page 2.

Solid Waste Advisory Committee

Bob McWilliams	683-4868
Roger Schmidt	778-7111
Barb Butler	247-8620
Sherrel Rhys	225-4359
Doug Sparrow	2276300
Clay Vincent	265-5481
Joe Aline	727-3537
Max Bauer	543-3157

Junk Vehicle Program News

Four Legislative Changes in JV Laws

By Darrell Stankey
Junk Vehicle Program Manager

The recently concluded Legislature passed a few bills affecting the JV Program.

►First, SB 107 increased the annual JV grant by about 25%. The new grant eligibility amounts have already been sent to you.

►Second, HB 232 changed the Capital Improvement Fund law. There no longer is a 10% maximum. Any unexpended amount at the end of the Fiscal Year may be placed in the Fund.

►Third, SB 211 did away with the $2 fee charged when wrecking facilities turn over a vehicle to your Program.

►Fourth, HB 635 allows licensed abandoned vehicles that otherwise qualify as junk to be directly submitted to your program as junkers. Please review the bill for the details. All other requirements, sheriff's release and assessed value statement, still apply.

For more information on these topics, please contact Darrell Stankey at 444-3048.

Storm Water SWPPP

Update Your Plans

By Pat Crowley

If you have coverage under the General Permit for Storm Water Discharges Associated with Industrial Activities, please make sure your storm water pollution prevention plan is up-to-date. If you are constructing a new cell or closing an old one, make sure these facilities, including borrow pits, are included in your plan. If they are not, you must notify the Storm Water Program 30 days prior to construction with an update to your SWPPP. Once construction is complete, please send them a copy of the as-built plan for your file.

USING LIME TO STABILIZE SEPTAGE

By Mary Louise Hendrickson and Pat Crowley

Alkali-stabilization is an often over-looked method of vector attraction/pathogen reduction. At pH levels greater than 12, the cell membranes of harmful pathogens are destroyed. The high pH prevents flies and other insects from infesting the treated waste. Lime stabilization has lower costs than other treatment options. Other benefits include a reduction of hydrogen sulfide gas generation and a reduction in the leachability of metals in the septage

Questions posed by pumpers indicate a lack of understanding of the techniques and materials required for effective stabilization. *Domestic septage is easily treated by adding lime to the tank truck or through the suction hose.*

►What kind of lime to use --Hydrated lime, calcium hydroxide, is alkaline and can create pH levels as high as 12.4. Hydrated lime comes in a fine, dry powder. *Hydrated lime, as opposed to quicklime, is recommended for the alkali-stabilization of septage*.

Quicklime, calcium oxide, is used as pebble lime, crushed or pulverized. Quicklime is reactive when mixed with water – heat is produced that can increase the temperature of the biological waste to 70ºC (158°F). *This material should NEVER be added directly to a septic tank or pumper truck. It should only be added as an hydrated lime slurry.*

Agricultural lime is used to adjust the soil to a neutral pH of 7.0. It does not have the strength or potency needed for lime stabilization of septage. *Do not substitute ground agricultural limestone for hydrated lime or quicklime.*

Both hydrated lime and quicklime are highly caustic, and care must be taken during use and storage. Lime is not hazardous or toxic, but it can be quite dusty and may be irritating to sensitive skin and the eyes. The operator should wear long sleeves, gloves, goggles, and a painters mask or a respirator mask.

(The diagram is From: "Septage Management in Ohio", Bulletin 854, Part 1, The Ohio State University Extension.)

►How to mix lime with the septage -- Approximately 50# of hydrated lime is needed per 1000 gallons of domestic sewage. A slight excess of lime insures stabilization and costs very little for insurance. Excess lime will not raise the pH above 12.4 @ 25°C. To insure adequate mixing of the lime and the septage, the hydrated lime must be added to the liquid septage. This can be done in several ways:

►Adding lime during pumping -- The *preferred method* for adding lime is provided in the diagram above. In this process, a “T” fitting is placed in the suction hose close to the tanker inlet. The leg of the “T” is fitted with a flexible valved hose for vacuuming lime. Adequate mixing should take place during pumping as the septage and lime meet in the “T” fitting. Lime can be vacuumed dry from a 50# bag, or if one prefers, a 55-gallon drum can be used to mix water and lime to produce a slurry.

A valve or cap on the lime hose is desirable so one can close this line after the lime is fed. When pumping a septic tank, the pump is started and the hose is submerged in the tank, as normal. As the septage is being evacuated, the flexible valved hose is inserted into a 50# bag of hydrated lime or the barrel of the lime slurry. The lime is vacuumed into the small hose, flows into the large septage hose where it mixes with the septage flowing into the truck.

►Adding lime to the pumper truck -- Dry hydrated lime should be added to the truck tank *only after the truck is at least partially full*. Lime/water slurries may be sucked onto the truck prior to leaving for the worksite, but some additional lime or slurry should be carried on the truck to make sure the pH is properly adjusted.

►Adding lime to the septic tank -- Hydrated lime can be mixed with the septage by adding it directly to the septic tank. First, open the septic tank and pump 200 gallons or so. Then dump the hydrated lime into the septic tank. When septage in the tank is pumped into the truck it automatically mixes the lime with the liquids and solids. However, the pumper must make sure that the liquid level of the septic tank is below the field line outlet prior to adding the lime so that the field lines are not contaminated with hydrated lime.

The major disadvantage of adding lime to the septic

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Using Lime, *continued from page 4*

tank is that the lime is so caustic that over time it can cause the baffles in the septic tank to fall off and deteriorate the tank, and, if this method is used repeatedly, a lime residue can build up in the tank. The residue affects the pH, and impairs the efficiency of digestion in the tank. *This method is not recommended by the Department.*

►pH Monitoring -- Regardless of the alkali-stabilization method chosen, *the pumper must ensure that the septage/lime mixture remains at a pH of 12 for a minimum of 30 minutes*. The high pH level destroys the cell membranes of harmful pathogens. To be effective, the *pH of 12 must be maintained for a minimum of 30 minutes* to discourage the regrowth of these harmful pathogens.

For additional questions about lime stabilization, contact the Montana Department of Environmental Quality, Solid Waste Regulatory Program at 406/444-4400.

What's New in the Solid Waste Program?

By Rick Thompson, Supervisor
Solid Waste Section

Andrea Vickory left the program to join the Public Water Supply Section. Replacing Andrea is Mary Hendrickson, a geologist with a strong background in hydrogeology. Mary has extensive experience in the private and public sectors in hazardous and non-hazardous solid waste management. If you have not already met Mary, please welcome her when she visits your site this summer or fall.

The legislature passed SB 375 that prohibits the use of baled tires as fencing material. The bill states, "Waste tires that are mechanically compressed or baled and bound together with cable, straps, wires, or other nonpermanent mechanical devices may not be used for any aboveground purpose within 500 feet of any road, commercial business, or private residence without the consent of the owner of the business or residence unless they are encased in a material that will maintain the integrity of the bale upon failure of the bale restraining devices." The bill also states that waste tire bales may not be placed under water or in a location in which they may enter state waters. Draft rules to guide the use of tire bales are forthcoming. Revision of the septic pumper rules and the solid waste fee rules are being written.

continued in column 2

Lime It, Till It, Track It, *continued from page 1*

Department rules so that you can clearly understand the requirements to reduce vector attraction and pathogens, with the appropriate crops and surface use restrictions, in conformance with EPA requirements. Read the rules carefully. The EPA 40 CFR Part 503 requirements are more difficult to read, but are summarized in a pamphlet available from the Department.

If you have questions, call or email me at the addresses above.

What's New, continued

The Solid Waste Fee Rules are currently being codified to implement an increase in the per ton rate from 31 to 40 cents and a 20% increase in the annual renewal, application, and license transfer fees.

The department's request to initiate rule making will be made to the Board of Environmental Review at the August 1st, 2003, meeting in Helena. A complete packet of the proposed rules will be mailed to all facilities for comment.

If you have any question on the proposed rule, please contact me at 444-5345 or at rithompson@state.mt.us You may also contact the members of the solid Waste Advisory Committee (contact information on page 3)

That is all I have for now. Have a safe and productive summer.

2003 UPDATE: West Nile Virus

By K Michele Fitcher
Solid and Hazardous Waste Specialist

West Nile Virus (WNV) is commonly found in Africa, West Asia, and the Middle East. "It is not known from where the U.S. virus originated, but it is most closely related genetically to strains found in the Middle East." [1] Center for Disease Control (CDC) scientists believe the virus has probably been in the eastern U.S. since the early summer of 1999, possibly longer.

The WNV, goes through a bird-mosquito cycle, and is transmitted through infected mosquitoes. Mosquitoes become infected when they bite infected birds. According to the Montana Department of Public Health & Human Services, people and mammals are dead-end

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hosts for the virus, and therefore, cannot infect other humans or animals. WNV infections occur primarily in the late summer or fall.

According to the CDC, one of the species of mosquitoes that carries WNV is the Culex species. Culex mosquitoes survive the winter in the adult stage. Because these mosquitoes may survive even a cold winter, and then transmit the virus to humans and animals during the following summer, waste management facilities must making every effort to discourage mosquito populations.

ARM 17.50.510 requires owners and operators of all solid waste management systems to prevent or control on-site populations of disease vectors. Therefore, any solid waste management facility not actively controlling vectors at their facility may be in violation of the rule.

Listed below are key areas commonly found at solid waste management facilities that have a high potential of providing open water mosquitoes may use to lay eggs. These areas should be managed to prevent pooling water to help reduce mosquito populations at your facility.

►APPLIANCES collected for recycling should be stored in an upright position or a position that will not collect water.

►SCRAP METAL PILES -- Inspect the piles frequently for material such as gutters that have a tendency to collect water.

►TIRES buried with waste and covered with daily cover are not a problem. However, tires temporarily stockpiled for chipping, must be inspected frequently for standing water. Discourage mosquitoes by using tarps and plastic covers to protect the tires during temporary storage periods.

►BUCKETS and other containers left in the open can collect water and create a haven for mosquitoes. Store unused buckets and other containers upside down or in a covered area.

For updated WNV information showing a map of confirmed WNV cases in the U.S.A, visit online at www.westnilemaps.usgs.gov . For additional information about WNV, see www.cdc.gov/ncidod/dvbid/westnile/q&a.htm.

[1]Centers for Disease Control and Prevention, *http://www.cdc.gov/ncidod/dvbid/westnile*.

DEQ, Solid Waste Program
P.O. Box 200901
Helena, MT 59620-0901

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